REMARKS

The Office Action has been carefully considered and the foregoing amendment made in response thereto. The present status is as follows:

- Claims 1-25 are pending in the application.
- Claims 1, 9, 10, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Coplans (U.S. Pat. No. 3,550,597) in view of Lain (U.S. Pat. No. 5,179,791) or Toschi (U.S. Pat. No. 5,720,117).
- Claims 1, 5-11, 15-17, 19-21, and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Anderié (U.S. Pat. No. 4,922,631) in view of Lain (U.S. Pat. No. 5,179,791) or Toschi (U.S. Pat. No. 5,720,117).
- Claims 22, 23, and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Anderié (U.S. Pat. No. 4,922,631) in view of Lain (U.S. Pat. No. 5,179,791) or Toschi (U.S. Pat. No. 5,720,117), in further view of Nagano (U.S. Pat. No. 5,446,977).
- Claims 2-4, 11-14, and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Coplans (U.S. Pat. No. 3,550,597) or Anderié (U.S. Pat. No. 4,922,631), in view of Lain (U.S. Pat. No. 5,179,791) or Toschi (U.S. Pat. No. 5,720,117).

In view of the above amendment and following remarks, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-25.

1. Applicant thanks the Examiner for participating in a telephone interview with Applicant's undersigned representative held on September 7, 2001. Applicant respectfully submits that this Amendment and Response is consistent with the discussion therein.

2. Claims 1, 9, 10, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Coplans (U.S. Pat. No. 3,550,597) in view of Lain (U.S. Pat. No. 5,179,791) or Toschi (U.S. Pat. No. 5,720,117). Applicant respectfully traverses this rejection as applied to the claims as amended.

Coplans discloses a torsion member 15 that compensates for the twisting of the foot during natural walking action. According to Coplans, forward walking motion applies the most pressure to the foot starting in the lateral (i.e., outer) heel region and ending in the medial (i.e.,

inner) anterior region. (During this forward progression, there is little pressure on the medial heel region through the lateral anterior region.) This progressive, oblique line of pressure causes the twisting of the foot. Col. 1, ll. 11-27. During forward walking motion, torsion member 15 supports the regions under lesser pressure "by yieldably lifting the inner posterior portion of the of the foot when there is relatively little pressure at that region, as shown in FIG. 9, and by yieldably lifting the outer anterior portion of the foot when there is relatively little pressure at that point." Col. 4, ll. 13-18. The result is "a noninterrupted torsional and lifting action from the rear to the front of the foot, all three sections 16, 17, and 18 participating in a continuous torsional lifting effort." Col. 4, ll. 35-37. This provides "with each step a comfortable lifting effort in [an] orthopedically correct manner." Col. 4, ll. 43-45. Thus, torsion member 15 does not create or control the torsional motion between the heel and anterior regions of the foot – such motion is inherent in natural walking action. Rather, torsion member 15 translates this torsional motion into a lifting force that it applies progressively across the extent of the foot during natural walking action to compensate for pressure differences.

Lain discloses a torsional spring insole 100 that helps correct pronation or supination of the foot. Col. 4, ll. 35-38. The torsional spring insole 100 is embedded between an outer sole 108 and solid filler material 112. When body weight lands inside or outside of the heel (thereby turning the foot inward our outward, respectively), the torsional spring insole 100 forces the shoe, and the foot secured in the shoe, into the correct position. Col. 4, ll. 41-50. Body weight landing inside or outside of the heel causes an inner sole 104 to flex and, as the body weight is transferred to the forward part of the foot (e.g., when walking), the inner sole 104 straightens. This straightening action of the inner sole 104 counteracts the pressure imbalance in the heel region caused by natural walking action. Col. 6, ll. 10-22. Specifically, "[a]s the body weight moves forward and is transferred to the inner sole 104, the potential energy stored in the insole is released providing an energy boost to the heel of the foot." Col. 5, ll. 48-51. A step-down region 106 of the torsional spring insole 100 stores the potential energy. Col. 6, ll. 15-16.

The Lain approach differs significantly from that used in Coplans because, in Lain, there is no contemporaneous, augmentive support mechanism that provides a lifting force to the entire extent of the foot while in motion. Coplans continuously supports each point on the foot where and when the pressure is deficient during motion. In contrast, Lain provides compensatory

pressure only to the heel region, and then only after the body weight has transferred to the forward part of the foot. Lain accomplishes this by storing potential energy in the step-down region 106 and releasing it, as a "boost" (i.e., burst-like), when the body weight leaves the heel region.

Toschi discloses a shank 10 for stiffening a shoe. The geometry of the shank 10 "provides maximum stability and torsional rigidity to the shank, preventing twisting or bending, and thus making walking more comfortable." Col. 2, ll. 19-21. The objective in Toschi is "for the shoe to be rigid in the midportion between the heel portion and the toe portion." Col. 3, ll. 62-63. Consequently, "[t]he shank 10 is affixed to the shoe's midportion and provides the desired rigidity." Col 3., ll. 63-65. This is distinguishable from both Coplans and Lain, where torsional movement is exploited to provide a lifting force (Coplans) or an energy boost (Lain).

Applicant respectfully submits that the combination of Coplans with Lain or Toschi is insufficient to make Applicant's invention appear obvious to one of ordinary skill in the art. There must be some reasonable expectation of success for the suggested combination. *See, e.g., In re Dow. Chem. Co.*, 5 USPQ 2d 1529, 1531 (Fed. Cir. 1988). Combining Coplans with Lain would result in a nonfunctional structure because Coplans is concerned with translating the energy corresponding to the torsional motion into a continuous lifting force, whereas Lain is directed to storing the energy for later use. These two alternatives are mutually exclusive. Consequently, a combination of Coplans and Lain would be inoperative as well as destroy the intended function of each reference. Furthermore, because the Toschi shank 10 operates to resist torsional motion, combining Coplans (where torsional motion is required) with Toschi would also result in an inoperative structure as well as destroy the intended function of each reference.

Further to his representative's September 7, 2001, telephone interview with the Examiner, Applicant has amended independent claim 1 to include the generally smooth concave contour present in the forefoot portion. No new matter has been added, as this feature in disclosed in, for example, Applicant's as-filed figures 2A1, 2A2, 2A3, and 4. Applicant also appreciates the Examiner's recommendation to qualify the "spanning substantially" language in claim 1 to reflect both the medial-lateral and longitudinal extents of the forefoot and rear foot portions of

the torsion system. (Applicant's as-filed figures 1 and 3, for example, depict these extents.) Applicant has amended claim 1 accordingly.

Applicant respectfully submits that claim 1, as amended herein, is clearly and patentably distinguished over the cited references, either alone or in combination, and is therefore allowable. Because claims 9, 10, and 15 depend, directly or indirectly, from independent claim 1, Applicant respectfully submits that claims 9, 10, and 15 are allowable as well.

Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1, 9, 10, and 15 under 35 U.S.C. § 103(a) as being unpatentable over Coplans in view of Lain or Toschi.

3. Claims 1, 5-11, 15-17, 19-21, and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Anderié (U.S. Pat. No. 4,922,631) in view of Lain (U.S. Pat. No. 5,179,791) or Toschi (U.S. Pat. No. 5,720,117). Applicant respectfully traverses this rejection as applied to the claims as amended.

Anderié discloses a stiffening element 9, 109 that is embedded in an intermediate sole 1, 101, 201 of a shoe. The purpose of the stiffening element 9, 109 is to restrict the bending of the shoe about axes that are transverse to the longitudinal axis of the shoe. Col. 1, ll. 64-67; col. 6, ll. 51-59. Such bending is undesirable because it contributes to lateral instability. Col. 1, ll. 48-51. Furthermore, the stiffening element 9, 109 has no adverse effect on the torsional motion (i.e., "twistability" of the front sole region relative to the rear sole portion) of the shoe. Col 2., ll. 20-22. Torsional flexibility in the shoe is desirable and supplied by recesses 6, 7, 106, 107, 206, 207. Col. 1, ll. 15-30, 42-44. Stiffening element 9, 109 counteracts the (undesirable) increased bending capability that is a by-product of the recesses 6, 7, 106, 107, 206, 207.

There is no motivation to combine Anderié with Lain or since each reference addresses different problems. Applicant's invention is nonobvious if the elements cited in the prior art typically deal with different problems. *See, e.g., Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481 (Fed. Cir. 1984). As discussed above, Lain stores the potential energy associated with shifting body weight and releases the energy to the heel region to compensate for a pressure imbalance. This is unrelated to limiting bending action

as disclosed by Anderié. Further, there is no reasonable expectation of success for the combination of Anderié with Lain. The structure resulting from this combination would exhibit limited bending action (due to the Anderié stiffening element 9, 109) that would necessarily limit the movement of the Lain torsional spring insole 100. This would reduce the amount of potential energy stored in the Lain step-down region 106, thereby significantly reducing or eliminating the needed pressure boost applied to the heel region.

There is also no motivation to combine Anderié with Toschi because each reference addresses different problems. As discussed above, Toschi shank 10 stiffens a shoe to prevent torsional motion. Additionally, Toschi shank 10 "accommodate[s] slight angular bending, twisting, or sideways rocking that occurs at the ball of the shoe, when the shoe is worn." Col 2., ll. 15-17. These objectives are incompatible with those of Anderié (discussed above), wherein stiffening element 9, 109 (i) has no adverse effect on torsional motion, and (ii) restricts bending about axes that are transverse to the longitudinal axes of the shoe.

Furthermore, Applicant's invention is not obvious because Anderié teaches away from the combination with Toschi. An invention is nonobvious where one prior art reference teaches away from the combination with a second prior art reference. *In re Rudko*, Civ. App. No. 98-1505, Slip Op. at 5-6 (Fed. Cir. May 14, 1999) (unpublished). A person of ordinary skill would not seek to combine the structural features associated with accommodating bending and resisting torsionability (Toschi) with other features associated with resisting bending and accommodating torsionability (Anderié).

Further to his representative's September 7, 2001, telephone interview with the Examiner, Applicant has amended independent claim 21 in a manner similar to that discussed above in relation to independent claim 1. Specifically, Applicant has amended claim 21 to include the generally smooth concave contour present in the forefoot portion. Again, no new matter has been added, as this feature in disclosed in, for example, Applicant's as-filed figures 2A1, 2A2, 2A3, and 4. Applicant has adopted the Examiner's recommendation to qualify the "spanning substantially" language in claim 21 to reflect both the medial-lateral and longitudinal extents of the forefoot and rear foot portions of the torsion system and amended the claim accordingly. As stated above, Applicant's as-filed figures 1 and 3, for example, depict these extents.

Applicant respectfully submits that claims 1 and 21, as amended herein, are clearly and patentably distinguished over the cited references, either alone or in combination, and are therefore allowable. Because claims 5-11, 15-17, 19, 20, and 24 depend, directly or indirectly, from independent claim 1 or 21, Applicant respectfully submits that claims 5-11, 15-17, 19, 20, and 24 are allowable as well.

Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1, 5-11, 15-17, 19-21, and 24 under 35 U.S.C. § 103(a) as being unpatentable over Anderié in view of Lain or Toschi.

4. Claims 22, 23, and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Anderié (U.S. Pat. No. 4,922,631) in view of Lain (U.S. Pat. No. 5,179,791) or Toschi (U.S. Pat. No. 5,720,117), in further view of Nagano (U.S. Pat. No. 5,446,977). Applicant respectfully traverses this rejection.

Nagano discloses a cycling shoe with a cleat-attaching portion that selectively allows the addition or removal of a cleat. Col. 1, ll. 45-48. Anti-slip projections 13a, 13b, 13c are arranged on the bottom sole 4 and operate to position the shoe when placed in a non-cleat attaching pedal. Col. 7, ll. 35-39. Consequently, the extent of movement of the toe is constrained to promote "smooth and comfortable" pedaling. Col. 7, ll. 30-34.

As discussed above, there is no motivation to combine Anderié with Lain or Toschi. Furthermore, Nagano teaches away from Applicant's invention because Nagano constrains movement of the toe (and, consequently, the foot) when pedaling, while Applicant promotes pre-selected rotation of the forefoot (that includes the toe) relative to the rearfoot. Accordingly, Applicant respectfully submits that the combination of Anderié and Lain or Toschi in further view of Nagano is insufficient to make Applicant's invention appear obvious to one of ordinary skill in the art. In addition, claims 22, 23, and 25 depend from independent claim 21. Applicant also respectfully submits that Nagano fails to cure the deficiencies of Anderié, Lain, and Toschi with respect to independent claim 21 as discussed above. Because claim 21, as amended herein, is allowable and clearly and patentably distinguished over the cited references, either alone or in combination, Applicant respectfully submits that claims 22, 23, and 25, all depending from claim 21, are allowable as well.

Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 22, 23, and 25 under 35 U.S.C. § 103(a) as being unpatentable over Anderié in view of Lain or Toschi, in further view of Nagano.

5. Claims 2-4, 11-14, and 18 stand rejected under 35 U.S.C. § 102(a) as being unpatentable over Coplans (U.S. Pat. No. 3,550,597) or Anderié (U.S. Pat. No. 4,922,631), in view of Lain (U.S. Pat. No. 5,179,791) or Toschi (U.S. Pat. No. 5,720,117). Applicant respectfully traverses this rejection.

Claims 2-4, 11-14, and 18 depend, directly or indirectly, from independent claim 1. As discussed above, Applicant respectfully submits that combinations of Coplans, Anderié, Lain, and Toschi do not render independent claim 1 obvious. Because claim 1, as amended herein, is allowable and clearly and patentably distinguished over the cited references, either alone or in combination, Applicant respectfully submits that claims 2-4, 11-14, and 18, all depending directly or indirectly from claim 1, are allowable as well.

Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 2-4, 11-14, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Coplans or Anderié, in view of Lain or Toschi.

CONCLUSION

In view of the foregoing, Applicant submits that claims 1-25 are clearly and patentably distinguished over the cited references, either alone or in combination, and are therefore allowable. Applicant respectfully request entry of this Amendment and Response, reconsideration, and early favorable action by the Examiner.

The Examiner is cordially invited to contact Applicant's undersigned representative at the number listed below to discuss any outstanding issues.

Respectfully submitted,

Date: September 20, 2001
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VERSION OF AMENDED ITEMS WITH MARKINGS TO SHOW CHANGES MADE
September 20, 2001

IN THE CLAIMS:

1. (Three times amended) A torsion system for an article of footwear including a sole with a forefoot area and a rearfoot area, the torsion system including a longitudinal axis and comprising:

a forefoot portion of the torsion system spanning substantially the entire forefoot area of the sole from a midtarsal area to a toe area and from a lateral side to a medial side, the forefoot portion having a generally smooth concave contour along the longitudinal axis;

a rearfoot portion of the torsion system spanning substantially the entire rearfoot area of the sole from the midtarsal area to a heel area and from the lateral side to the medial side; and

an intermediate portion of the torsion system coupling the forefoot portion and the rearfoot portion, and constructed of a material and configured to allow, in a pre-selected manner, rotation of the forefoot portion relative to the rearfoot portion about the longitudinal axis.

21. (Three times amended) An article of footwear including a sole with a forefoot area and a rearfoot area and a torsion system, the torsion system comprising:

a sole plate rigid in a horizontal plane and including a longitudinal axis, the sole plate comprising:

a forefoot portion of the sole plate spanning substantially the entire forefoot area of the sole from a midtarsal area to a toe area and from a lateral side to a medial side, the forefoot portion having a generally smooth concave contour along the longitudinal axis;

a rearfoot portion of the sole plate spanning substantially the entire rearfoot area of the sole from the midtarsal area to a heel area and from the lateral side to the medial side; and

an intermediate portion of the sole plate coupling the forefoot portion and the rearfoot portion and constructed of a material and configured to allow, in a pre-selected manner, rotation of the forefoot portion relative to the rearfoot portion about the longitudinal axis.